

Abstract

An M toxin of type A botulinum toxin (HA-negative substance) and a mixture of L toxin and LL toxin (HA-positive substance) are compared and examined in inhibitory action for neuromuscular transmission and therapeutic index. As a result, it is found that M toxin of type A botulinum toxin has characteristics of: 1) having an excellent inhibitory action for neuromuscular transmission; 2) showing a high therapeutic index; 3) showing a low antigenicity and 4) suffering from little reduction in efficacy even after repeatedly administered, compared with the

mixture of L toxin and LL toxin. Owing to these characteristics, the M toxin of type A botulinum toxin is particularly useful as a therapeutic agent for diseases caused by hypermyotonia such as strabismus, blepharospasm, facial spasms, spasmodic torticollis, paralysis after cerebral apoplexy, infantile cerebral paralysis, spasmodic phonopathy, headache such as migraine, chronic pain such as lumbago, stiff shoulder, muscular relaxation disorder accompanied with onset of Parkinson's disease or multiple sclerosis, myofascial pain syndrome, masticatory spasm, chronic anal fissure, urinary inconsistency, grinding of teeth, facial myokymia, tic, topical dystonia and wrinkles.